

Listing of Claims:

1. (Currently Amended) A photosensor system comprising:
a photosensor array including a plurality of photosensors in
a two-dimensional array; ~~constituted by two dimensionally~~
~~arraying a plurality of photosensors,~~

5 an image reader which reads a subject image at a
predetermined reading sensitivity by the photosensor array; [[:]]

a sensitivity-adjusting reader which ~~reads~~ causes the
subject image ~~while changing an~~ to be read by a specific region
of the photosensor array to read the subject image at a plurality
10 of different image reading sensitivities ~~sensitivity of the~~
~~photosensor array~~ at a corresponding plurality of stages for the
specific region of the photosensor array;

optimal image reading sensitivity extraction means for
extracting an optimal image reading sensitivity suitable for the
15 image reading operation based on ~~the basis of~~ a comparison of
predetermined measurement ~~amount relating~~ amounts which
correspond to the plurality of different image reading
sensitivities and which relate to an image pattern of the subject
image corresponding to the specific region of the photosensor
20 array and read by the sensitivity-adjusting reader; and

reading sensitivity setting means for setting the optimal
image reading sensitivity to a reading sensitivity of the image
reader.

Claim 2 (Canceled).

3. (Currently Amended) ~~A~~ The system according to claim 1, wherein the sensitivity-adjusting reader reads the subject image by setting different image reading sensitivities stepwise for photosensors of a specific row section of at least one ~~to several~~ specific ~~rows~~ row of the photosensor array.

4. (Currently Amended) ~~A~~ The system according to claim 3, wherein the photosensors of the specific row section of the photosensor array are photosensors of one specific row.

5 5. (Currently Amended) ~~A~~ The system according to claim 3, further comprising abnormal pixel determining means for determining whether the specific row section ~~contain~~ contains an abnormal pixel by checking whether the measurement amount corresponding to one column of the specific row section has changed each time the image reading sensitivities are changed ~~switched from one to another~~.

6. (Currently Amended) ~~A~~ The system according to claim 5, further comprising sensitivity-adjusting read controlling means for executing the sensitivity-adjusting reading operation with

respect to a different specific row section ~~other than the~~
5 ~~specific row section~~ if the abnormal pixel determining means
determines that ~~the~~ an abnormal pixel exists in the specific row
section.

7. (Currently Amended) ~~A~~ The system according to claim 1,
wherein the predetermined measurement ~~amount in the optimal~~
~~reading sensitivity extraction means is~~ amounts comprise
lightness data corresponding to the image pattern of the subject
image read by the sensitivity-adjusting reader.

8. (Currently Amended) ~~A~~ The system according to claim 1,
wherein the image reading sensitivity of the photosensor array is
set by adjusting a photosensor charge accumulating period ~~of the~~
~~photosensor~~.

9. (Currently Amended) ~~A~~ The system according to claim 1,
~~which further comprises, in the image reader and the sensitivity-~~
~~adjusting reader in the photosensor array,~~ further comprising an
effective voltage adjuster which applies to each photosensor a
5 correction signal for setting ~~to optimal values~~ effective
voltages of signal voltages applied to each photosensor to
optimal values.

10. (Currently Amended) ~~A~~ The system according to claim 1, wherein the optimal reading sensitivity extraction means comprises:

measurement amount comparison means for extracting maximum
5 and minimum values of ~~the~~ a measurement amount relating to the image pattern of the subject image for each of the different image reading ~~sensitivity~~ sensitivities based on ~~the basis of~~ the subject image read by ~~a~~ the sensitivity-adjusting reader;

dynamic range calculation means for calculating a dynamic
10 range of the measurement amount based on ~~the basis of~~ the maximum and minimum values of the measurement amount extracted for said each of the different image reading ~~sensitivity~~ sensitivities; and

maximum dynamic range extraction means for extracting an
15 image reading sensitivity having a maximum dynamic range among dynamic ranges of the measurement amounts calculated for ~~each~~ the image reading ~~sensitivity~~ sensitivities.

11. (Currently Amended) ~~A~~ The system according to claim 10, wherein the measurement amount comparison means extracts the maximum and minimum values of the measurement amount in a predetermined column range of each row in the specific region.

12. (Currently Amended) ~~A~~ The system according to claim 1, wherein the optimal reading sensitivity extraction means comprises:

a displacement calculation means for calculating a
5 displacement of the measurement ~~amount~~ amounts relating to the image pattern of the subject image between the different image reading sensitivities based on ~~the basis of~~ the subject image read by the sensitivity-adjusting reader; and

a maximum displacement extraction means for extracting an
10 image reading sensitivity having a maximum displacement among displacements of the measurement amounts between the different image reading sensitivities.

13. (Currently Amended) ~~A~~ The system according to claim 12, wherein the displacement calculation means calculates a differentiated value of ~~the~~ a measurement amount on predetermined columns of each row in the specific region.

14. (Currently Amended) ~~A~~ The system according to claim 1, wherein the optimal reading sensitivity extraction means , comprises:

a measurement amount comparison means for extracting maximum
5 and minimum values of ~~the~~ a measurement amount relating to the image pattern of the subject image for each of the different

image reading ~~sensitivity~~ sensitivities based on ~~the basis of~~ the
subject image read by the sensitivity-adjusting reader;

10 a dynamic range calculation means ~~for calculating~~ for
calculating a dynamic range of the measurement amount based on
~~the basis of~~ the maximum and minimum values of the measurement
amount extracted for said each of the different image reading
~~sensitivity~~ sensitivities; and

15 a maximum dynamic range extraction means for extracting an
image reading sensitivity at which the dynamic range of the
measurement amount for said each of the different image reading
~~sensitivity~~ sensitivities maximizes and at which a displacement
of the dynamic range between the different image reading
sensitivities minimizes.

15. (Currently Amended) ~~A~~ The system according to claim 1,
~~which~~ further ~~comprises~~ comprising an abnormal value removing
means for removing an abnormal value deviating from a main change
trend of ~~the~~ a measurement amount, from ~~the~~ a measurement amount
5 relating to the image pattern of the subject image read by the
sensitivity-adjusting reader for each of the different image
reading sensitivities.

16. (Currently Amended) ~~A~~ The system according to claim 15,
wherein the abnormal value removing means removes the abnormal

value by performing Fourier transformation for the measurement amount and removing a predetermined high-frequency component from the frequency-converted measurement amount.

17. (Currently Amended) ~~A~~ The system according to claim 1, which further comprises:

measurement amount comparison means for extracting maximum and minimum values of ~~the~~ a measurement amount relating to the image pattern of the subject image for each of the different image reading ~~sensitivity~~ sensitivities based on ~~the basis of~~ the subject image read by the sensitivity-adjusting reader;

~~a~~ dynamic range calculation means for ~~which~~ calculating a dynamic range of the measurement amount based on ~~the basis of~~ the maximum and minimum values of the measurement amount extracted for said each of the different image reading ~~sensitivity~~ sensitivities;

specific value extraction means for extracting, for said each of the different image reading ~~sensitivity~~ sensitivities, a specific value at which the dynamic range of the measurement amount for said each of the different image reading ~~sensitivity~~ sensitivities maximizes and at which a displacement of the dynamic range between the different image reading sensitivities maximizes; and

20 an abnormality determination means for which determining
presence/absence of an abnormality contained in the subject image
based on ~~the basis of~~ the specific value.

18. (Currently Amended) ~~A~~ The system according to claim 1,
wherein:

5 each of the photosensors ~~has~~ comprises: (i) a source
electrode and drain electrode, (ii) ~~formed via~~ a channel region
made from a semiconductor layer formed between the source
electrode and drain electrode, and (ii) a top gate electrode and
bottom gate electrode formed ~~at least~~ respectively on and below
the channel region ~~via~~ with insulating films provided between the
top gate electrode and bottom gate electrode and the channel
10 region,

~~either one~~ of the top gate electrode side and bottom gate
electrode side is ~~used as~~ a light irradiation side, and

charges corresponding to a light quantity irradiated from
the light irradiation side are generated and accumulated in the
15 channel region.

19. (Currently Amended) A drive control method for a
photosensor system ~~having a photosensor array constituted by~~
~~two dimensionally arraying~~ including a plurality of photosensors
in a two-dimensional array, said method comprising: [[:]]

5 executing a sensitivity-adjusting reading operation of
~~reading~~ causing a subject image ~~while changing an~~ to be read by a
specific region of the photosensor array at a plurality of
different image reading sensitivities ~~sensitivity of the~~
~~photosensor array~~ at a corresponding plurality of stages for the
10 specific region of the photosensor array;

 extracting an image reading sensitivity suitable for an
image reading operation of the subject image based on ~~the basis~~
~~of~~ a comparison of predetermined measurement ~~amount relating~~
amounts which correspond to the plurality of different image
15 reading sensitivities and which relate to an image pattern of the
subject image corresponding to the specific region of the
photosensor array and read by the sensitivity-adjusting reading
operation;

 setting the extracted image reading sensitivity as a reading
20 sensitivity in the reading operation of the subject image; and

 executing the image reading operation of reading the subject
image at the set reading sensitivity.

Claim 20 (Canceled).

21. (Currently Amended) ~~A~~ The method according to claim 19,
wherein the sensitivity-adjusting reading operation is performed
by reading the subject image at different image reading

5 sensitivities that are set stepwise for photosensors of a
specific row section of at least one ~~to several~~ specific ~~rows~~
row of the photosensor array.

22. (Currently Amended) ~~A~~ The method according to claim 21,
wherein the photosensors of the specific row section of the
photosensor array are photosensors of one specific row.

23. (Currently Amended) ~~A~~ The method according to claim 21,
further comprising determining whether the specific row section
~~contain~~ contains an abnormal pixel by checking whether the
measurement amount corresponding to one column of the specific
row section has changed each time the image reading sensitivities
are changed ~~switched from one to another~~.

24. (Currently Amended) ~~A~~ The method according to claim 23,
further comprising executing the sensitivity-adjusting reading
operation with respect to a different specific row section ~~other~~
~~than the specific row section if the abnormal pixel determining~~
5 ~~step determines that the~~ if an abnormal pixel exists in the ~~one~~
specific row section.

25. (Currently Amended) ~~A~~ The method according to claim 19,
wherein the predetermined measurement ~~amount is~~ amounts

comprise lightness data corresponding to the image pattern of the subject image read by the sensitivity-adjusting reading operation.

26. (Currently Amended) ~~A~~ The method according to claim 19, wherein the image reading sensitivity of the photosensor array is set by adjusting a photosensor charge accumulating period ~~of the photosensor~~.

27. (Currently Amended) ~~A~~ The method according to claim 19, wherein the extracting the image reading sensitivity comprises:

extracting maximum and minimum values of ~~the~~ a measurement amount relating to the image pattern of the subject image for
5 each of the different image reading ~~sensitivity~~ sensitivities
based on ~~the basis of~~ the subject image read by the sensitivity-adjusting reading operation;

calculating a dynamic range of the measurement amount
based on ~~the basis of~~ the maximum and minimum values of the
10 measurement amount extracted for said each of the different image reading ~~sensitivity~~ sensitivities; and

extracting an image reading sensitivity having a maximum dynamic range among dynamic ranges of the measurement amounts calculated for ~~each~~ the different image reading ~~sensitivity~~
15 sensitivities.

28. (Currently Amended) ~~A~~ The method according to claim 19, wherein the extracting the image reading sensitivity comprises:

calculating a displacement of the measurement ~~amount~~ amounts relating to the image pattern of the subject image between the
5 different image reading sensitivities based on ~~the basis of~~ the subject image read by the sensitivity-adjusting reading operation; and

extracting an image reading sensitivity at which a displacement of the measurement ~~amount~~ amounts between the
10 different image reading sensitivities maximizes.

29. (Currently Amended) ~~A~~ The method according to claim 19, wherein the extracting the image reading sensitivity comprises:

extracting maximum and minimum values of ~~the~~ a measurement amount relating to the image pattern of the subject image for
5 each of the different image reading ~~sensitivity~~ sensitivities based on ~~the basis of~~ the subject image read by the sensitivity-adjusting reading operation;

calculating a dynamic range of the measurement amount based on ~~the basis of~~ the maximum and minimum values of the
10 measurement amount extracted for said each of the different image reading ~~sensitivity~~ sensitivities; and

extracting an image reading sensitivity at which the dynamic range of the measurement amount for said each of the different image reading ~~sensitivity~~ sensitivities maximizes and at which a
15 displacement of the dynamic range between the different image reading sensitivities minimizes.

30. (Currently Amended) ~~A~~ The method according to claim 19, wherein the extracting the image reading sensitivity comprises:

extracting maximum and minimum values of ~~the~~ a measurement amount relating to the image pattern of the subject image for each of the different image reading ~~sensitivity~~ sensitivities based on ~~the basis of~~ the subject image read by the sensitivity-adjusting reading operation;

calculating a dynamic range of the measurement amount based on ~~the basis of~~ the maximum and minimum values of the measurement amount extracted for said each of the different image reading ~~sensitivity~~ sensitivities;

extracting a specific value at which the dynamic range of the measurement amount for said each of the different image reading ~~sensitivity~~ sensitivities maximizes and at which a displacement of the dynamic range between the different image reading sensitivities maximizes; and

determining presence/absence of an abnormality contained in the subject image based on ~~the basis of~~ the specific value.

31. (Currently Amended) ~~A~~ The method according to claim 19,
wherein the extracting the image reading sensitivity comprises
[[:]] removing an abnormal value deviating from a main change
trend of ~~the~~ a measurement amount, from ~~the~~ a measurement amount
5 relating to the image pattern of the subject image for each of
the different image reading ~~sensitivity~~ sensitivities.

32. (Currently Amended) ~~A~~ The method according to claim 31,
wherein the removing the abnormal value from the measurement
amount comprises [[:]] performing Fourier transformation for the
measurement amount and removing a predetermined high-frequency
5 component from the frequency-converted measurement amount.

33. (Currently Amended) ~~A~~ The method according to claim 19,
wherein:

each of the photosensors ~~has~~ comprises: (i) a source
electrode and drain electrode, (ii) ~~formed via~~ a channel region
5 made from a semiconductor layer formed between the source
electrode and drain electrode, and (ii) a top gate electrode and
bottom gate electrode formed ~~at least~~ respectively on and below
the channel region ~~via~~ with insulating films provided between the
top gate electrode and bottom gate electrode and the channel
10 region,

~~either~~ one of the top gate electrode side and bottom gate electrode side is ~~used as~~ a light irradiation side, and

charges corresponding to a light quantity irradiated from the light irradiation side are generated and accumulated in the channel region.

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